INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP03/13123

A. CLASSIFICATION OF SUBJECT MATTER
Int.Cl[7] C12N15/09, C07K16/18, A61K39/395, A61P7/00, A61P31/12, A61P35/00, A61P37/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
Int.Cl[7] C12N15/09, C07K16/18, A61K39/395, A61P7/00, A61P31/12, A61P35/00, A61P37/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
JSTPlus(JOIS), MEDLINE(STN), WPI(DIALOG), BIOSIS(DIALOG)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y A	FRANCOIS, C. et al., Construction of a bispecific antibody reacting with the alpha- and beta-chains of the human IL-2 receptor., J.Immunol., Vol.150, No.10, pages 4610 to 4619(1993)	1-4 5-19,21,22 23-35,37,38
X Y A	LU, D. et al., Di-diabody: a novel tetravalent bispecific antibody molecule by design., J.Immunol.Methods, Vol.279, Nos.1 to 2, pages 219 to 232(2003 August)	1 2-19,21,22 23-35,37,38
X Y A	LU, D. et al., Fab-scFv fusion protein: an efficient approach to production of bispecific antibody fragments., J.Immunol.Methods, Vol.267, No.2, pages 213 to 226(2002)	1 2-19,21,22 23-35,37,38

[X] Further documents are listed in the continuation of Box C. [ ] See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier document but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
10 November, 2003 (10.11.03)	25 November, 2003 (25.11.03)
Name and mailing address of the ISA/ Japanese Patent Office	Authorized officer
Facsimile No.	Telephone No.

Form PCT/ISA/210 (second sheet) (July 1998)

INTERNATIONAL SEARCH REPORT

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PCT/JP03/13123

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	KIM, S.H. et al., Mammalian type I interferon receptors consists of two subunits: IFNaR1 and IFNaR2, Gene, Vol.196, Nos.1 to 2, pages 279 to 286(1997)	2-19,21,22
X A	SEGAL, D.M. et al., Introduction: bispecific antibodies., J.Immunol.Methods, Vol.248, Nos.1 to 2, pages 1 to 6(2001)	1 2-19,21-35, 37,38
X A	CARTER P., Bispecific human IgG by design., J.Immunol.Methods, Vol.248, Nos.1 to 2, pages 7 to 15(2001)	1 2-19,21-35, 37,38

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Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. [X] Claims Nos.: 20, 36
   because they relate to subject matter not required to be searched by this Authority, namely:
   They pertain to methods for treatment of the human body by therapy.

2. [ ] Claims Nos.:
   because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. [ ] Claims Nos.:
   because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
Claims have:
(1) inventions relating to "a bispecific antibody having an activity of substituting for the ligand function of a receptor containing heteromolecules" as set forth in claims 2 to 19, 21 and 22; and
(2) inventions relating to "a bispecific antibody recognizing both of an enzyme and its substrate" as set forth in claims 23 to 35, 37 and 38.
These groups of inventions are common to each other in nothing but being a bispecific antibody (double specific antibody). As reported by the following documents 1 and 2, however, double specific antibodies had been publicly known before the application and thus cannot be (continued to extra sheet)

1. [ ] As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. [X] As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. [ ] As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. [ ] No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest
[ ] The additional search fees were accompanied by the applicant's protest.
[ ] No protest accompanied the payment of additional search fees.

Continuation of Box No. II of continuation of first sheet(1)

considered as a special technical feature in accordance with PCT Rule 13.2. Thus, these groups of inventions are not considered as being so linked as to form a single general inventive concept. Such being the case, claims of the present case have 2 groups of inventions.

Document 1: J. Immunol., Vol.150, No.10, pp.4610-4619 (1993)
Document 2: J. Immunol Methods, Vol.248, No.1-2, pp.1-6 (2001)